FREE REVISION PACK

Drag & Terminal Velocity

Pearson Edexcel International Advanced Level Physics · Unit 1 (WPH11) · Specification points 25 (part)

Easy | Multiple choice · past-paper questions

4	4	≈ 5 min
QUESTIONS	TOTAL MARKS	SUGGESTED TIME*

Contents

Q	LEVEL	FOCUS	SOURCE	MARKS
1	Easy	Forces on a balloon rising at terminal velocity	Edexcel IAL October 2025 · Unit 1 · Q5	1 mark
2	Easy	Upthrust and drag on a sinking sphere	Edexcel IAL June 2022 · Unit 1 · Q2	1 mark
3	Easy	Coin and feather falling through air	Edexcel IAL January 2025 · Unit 1 · Q2	1 mark
4	Easy	Why a falling object's acceleration decreases	Edexcel IAL January 2020 · Unit 1 · Q10	1 mark

Key ideas to have ready

- Drag increases with speed. Upthrust on a fully submerged object is constant.
- As an object speeds up, drag grows, the resultant force falls and so does the acceleration.
- At terminal velocity the resultant force is zero: weight = drag + upthrust (falling).
- For an object rising at terminal velocity, drag acts downwards: upthrust = weight + drag.

How to use this pack

1. The questions are grouped into levels (Easy). Work through them in order, and check your answers at the end of each level before moving on.
2. Every question is multiple choice with one correct answer. Write down your working anyway; that is how you find mistakes.
3. The separate mark scheme uses the same numbers and explains every answer.

Levels are based on how students did in Pearson's examiner reports where that information exists, plus our own difficulty rating. *About 1.5 minutes per question.

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Easy

Definitions and one-step ideas. Most students get these right.

Questions 1–4

Choose **one** answer for each question and put a cross in the box next to it.

Edexcel IAL October 2025 · Unit 1 · Q5

1 A balloon moves upwards at terminal velocity.

The forces acting on the balloon are upthrust U, viscous drag D and weight W.

Which of the following statements about the magnitudes of the forces acting on the balloon is correct?

☒ **A** $U = W$

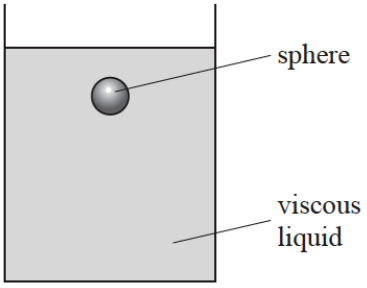
☒ **B** $U = D$

☒ **C** $U < D$

☒ **D** $U > W$

Edexcel IAL June 2022 · Unit 1 · Q2

2 A sphere falls through a viscous liquid as shown.



Which row of the table describes the upthrust and the viscous drag on the sphere as it accelerates downwards?

	Upthrust	Viscous drag
☒ **A**	increasing	increasing
☒ **B**	constant	increasing
☒ **C**	increasing	constant
☒ **D**	constant	constant

Edexcel IAL January 2025 · Unit 1 · Q2

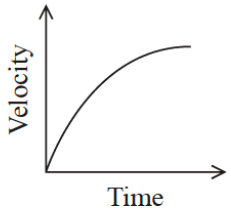
3 A coin and a feather are dropped from the same height, through air.

Which row of the table is correct as the coin and feather fall to the ground?

		Initial acceleration	Time taken to reach the ground
☒	**A**	Greater for coin	Less for coin
☒	**B**	Greater for coin	Same for coin and feather
☒	**C**	Same for coin and feather	Less for coin
☒	**D**	Same for coin and feather	Same for coin and feather

Edexcel IAL January 2020 · Unit 1 · Q10

4 Some students were shown a velocity-time graph for the motion of an object falling through a liquid.



The students suggested possible explanations for the decrease in gradient of the graph.

Which explanation could be a reason for the gradient of the graph decreasing?

☒ **A** The drag force increases.

☒ **B** The gravitational force increases.

☒ **C** The temperature of the liquid increases.

☒ **D** The upthrust on the object decreases.

End of questions. Check your answers with the matching mark scheme. More free packs and 1-to-1 tuition: **www.getbetteratphysics.co.uk**